



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,084	04/23/2004	Heung-cup Jeong	1349.1369	7671
21171	7590	03/29/2006	EXAMINER	
STAAS & HALSEY LLP			GLEITZ, RYAN M	
SUITE 700			ART UNIT	PAPER NUMBER
1201 NEW YORK AVENUE, N.W.			2852	
WASHINGTON, DC 20005				

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/830,084

Applicant(s)

JEONG ET AL.

Examiner

Ryan Gleitz

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 and 25-31 is/are rejected.
- 7) ☒ Claim(s) 23 and 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/01/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 11-17, 30, and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Okada (JP 11-272138).

Okada discloses a used toner collecting apparatus including a collecting container, as shown in figure 1, having a used toner inlet (11) through which the used toner, transported from the cleaner (3), enters; and a dispersing and pulverizing member (12), which reads on a shattering member, inside the collecting container, having a breaking blade, for example, the tip of the dispersing member (12), to break the used toner that drops through the used toner inlet (11).

Regarding claim 2, the shattering member is v-shaped, including a first slant and a second slant each respectively at an obtuse angle to a dropping direction of the used toner dropped from the used toner inlet.

Regarding claim 3, figure 1 also shows that the tip of the dispersing member borders the first slant and second slant in parallel with the dropping direction of the used toner.

Regarding claim 4, figure 1 also shows that the breaking blade is disposed below the used toner inlet.

Regarding claim 5, figure 1 also shows that the shattering member (12) is attached at a wall of the collecting container.

Regarding claim 6, the cross sectioned view of figure 1 clearly shows a second blade face having a predetermined slope with respect to the dropping direction of the used toner from the used toner inlet (11), and a first blade face in parallel with the dropping direction of the used toner shown at the top left of the container, when the toner does not fall perpendicular to the toner inlet (11).

Regarding claim 15, regardless of the distance between the top end of dispersing member (12) and the lower end of used toner inlet (11), the distance reads on just below.

Regarding claims 30 and 31, the shattering member (12) allows the used toner to spread evenly from a side to a side of the shattering member.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

Art Unit: 2852

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7, 18, 19, 21, 22, 26, 27, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano (JP 03-073986) in view of Okada (JP 11-272138).

Takano discloses a used toner collecting apparatus of a laser printer, which collects the used toner, which is transported from a first cleaner (11) to remove the used toner left on a transfer medium (2), and a second cleaner (3) to remove the used toner left on a photosensitive medium (1), the used toner collecting apparatus including a collecting container (15), having a first used toner inlet through which the used toner, transported from the first cleaner, enters, and a second used toner inlet through which the used toner transported from the second cleaner, enters, as shown by figure 1.

Regarding claim 19, the first cleaner includes a cleaning blade (11), and an auger and a conveying duct (26, 28) to guide the used toner in an embodiment shown in figures 3 and 5, to the collecting container (not shown).

Regarding claim 21 and 22, the second cleaner includes cleaning blade (3), and an auger and a conveying pipe (31, 32) to transport the used toner in an embodiment shown in figures 3 and 6, to the collecting container (not shown). The used toner is collected in housing (30) before it is transported by the auger.

Regarding claims 26 and 27 the conveying pipe is a flexible auger.

Takano does not disclose a shattering member.

However, Okada discloses a shattering member (12), having first and second slants as discussed above, under a used toner inlet inside a collecting container, having a breaking blade to

break the used toner that drops from the corresponding used toner inlet, so that the broken used toner spreads evenly across the container.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the user toner collecting apparatus of Takano to include the shattering member taught by Okada to pulverize and disperse toner so that it can be separated and then effectively recycled. See abstract.

Claims 1-22, 25, 26, and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (JP 09-311602) in view of Okada (JP 11-272138).

Ikeda et al. disclose a used toner collecting apparatus of a laser printer, which collects the used toner, which is transported from a first cleaner (141) to remove the used toner left on a transfer medium (14a), and a second cleaner (19) to remove the used toner left on a photosensitive medium (10), the used toner collecting apparatus including a collecting container, for example container (250) in figure 5, container (150) in figure 3, and container (50) in figure 1, having a first used toner inlet through which the used toner, transported from the first cleaner, enters, and a second used toner inlet through which the used toner transported from the second cleaner, enters, as shown by figures 5 and 1.

Regarding claims 8-10, the collecting container (150) includes a first space portion having a first volume to admit the used toner from the first used toner inlet; and a second space portion having a second volume to admit the used toner from the second used toner inlet, wherein the shattering member is disposed at one of the first and second space portions, having a

Art Unit: 2852

larger volume. Figure 3 shows that the left side of container (150) is a first portion wider than the right side of container (150).

Regarding claims 19 and 20, a cleaning blade (141) contacts the transferring belt, and an auger (142) and conveying duct (143) guide the used toner along an inclined place to an outlet.

Regarding claims 22, 25 and 26, a cleaning blade (19a), and an auger (19b) and conveying pipe (19c) guide the toner from housing (19) to the collecting container. The auger is a pump.

Regarding claims 28 and 29, the collecting container (150) includes a rear wall in which the first and second used toner inlets are formed, as shown by figure 5, and a front wall formed in front of the rear wall. First and second space portions are designated between the rear and front walls, into which used toner is admitted, from the dimensions shown in figure 3, such that the width of the first space portion being greater than the height of the first space portion, and the height of the second space portion being greater than a width of the second space portion.

Ikeda et al. does not disclose a shattering member.

However, Okada discloses a shattering member (12), having first and second slants as discussed above, under a used toner inlet inside a collecting container, having a breaking blade to break the used toner that drops from the corresponding used toner inlet, so that the broken used toner spreads evenly across the container.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the first used toner inlet of the toner collecting apparatus of Ikeda et al. to include the shattering member taught by Okada to pulverize and disperse toner so that it can be separated and then effectively recycled. See abstract.

Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (JP 09-311602) in view of Okada (JP 11-272138) as applied to claims 1-22, 25, 26, 30, and 31 above, and further in view of IBM Technical Disclosure Bulletin, vol. 15, No. 4, p. 1262 ("IBM").

Ikeda et al. and Okada disclose the collecting apparatus above, but do not disclose that the conveying pipe or auger is flexible.

However, IBM discloses a flexible auger for use in a toner collection device.

It would have been obvious to one of ordinary skill at the time the invention was made to modify the collection apparatus of Ikeda et al. and Okada with the flexible auger of IBM to enable toner traveling over nonlinear paths around machine elements and to simplify maintenance procedures. IBM, lines 7-15.

#### ***Allowable Subject Matter***

Claims 23 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments filed 1 March 2006 have been fully considered but they are not persuasive.

Applicant submits that the dispersing member (12), based on a dictionary definition, does not necessary imply breaking. However, member (12) is actually described by Okada as a



Art Unit: 2852

“pulverizing and dispersing means.” Abstract, line 2. Pulverizing must include breaking and/or shattering.

Further, even if Okada described member (12) as dispersing member and intended member (12) to only provide the function of dispersing, the structure shown in figure 1 would inherently break and/or shatter the toner that drops onto the sharp point edge.

Regarding the arguments with respect to claim 2, applicant seems to read into the claim a limitation of different angles for the first and second slants. This limitation is not found in the claim.

Regarding the arguments with respect to claim 6, either face of member (12) is parallel to a dropping direction of the toner, especially just after the toner particles come out of contact with member (12).

Therefore, Applicant’s arguments are not found persuasive.

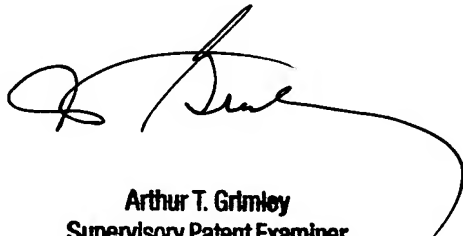
#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
rg

  
**Arthur T. Grimley**  
**Supervisory Patent Examiner**  
**Technology Center 2800**